

CLAIMS

Now, therefore, the following is claimed:

1. A method for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said method comprising the steps of:

receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered; re-sequencing the right channel pixel data and the left channel pixel data; and simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.

2. The method of claim 1, wherein a frame rate of the pixel data simultaneously output for displaying the image to be rendered in passive stereo is approximately one half of a frame rate of the pixel data of the active stereo video data.

3. The method of claim 1, wherein the step of receiving the active stereo video data comprises the step of:

receiving the active stereo video data from multiple digital video data streams, each of the multiple digital video data streams being provided by a graphics pipeline, each graphics pipeline being configured to process pixel data corresponding to at least a portion of the image to be rendered.

4. The method of claim 1, further comprising the step of:
providing a first left channel frame buffer, a second left channel frame buffer,
a first right channel frame buffer, and a second right channel frame buffer; and
wherein the step of re-sequencing the right channel pixel data and the left
5 channel pixel data comprises the step of:

allocating the right channel pixel data and the left channel pixel data to the
first left channel frame buffer, the second left channel frame buffer, the first right
channel frame buffer, and the second right channel frame buffer.

10 5. The method of claim 1, wherein the step of simultaneously outputting
corresponding frames comprises the steps of:

buffering a first frame of the right channel pixel data;

buffering a first frame of the left channel pixel data;

15 simultaneously providing the first frame of the right channel pixel data and the
first frame of the left channel pixel data for displaying the image to be rendered;

determining whether a second frame of the right channel pixel data and a
second frame of left channel pixel data are ready for simultaneously providing; and

20 if the second frame of the right channel pixel data and the second frame of left
channel pixel data are not ready for simultaneously providing, again simultaneously
providing the first frame of the right channel pixel data and the first frame of the left
channel pixel data.

6. The method of claim 3, wherein the step of receiving the active stereo video data from multiple digital video data streams comprises the steps of:

receiving a first of the multiple digital video data streams containing three-dimensional pixel data corresponding to the image to be rendered; and

5 receiving a second of the multiple digital video data streams containing two-dimensional pixel data corresponding to the image to be rendered; and

wherein the step of re-sequencing the right channel pixel data and the left channel pixel data comprises the step of:

10 combining the two-dimensional pixel data and the three-dimensional pixel data.

7. The method of claim 3, wherein the step of combining the two-dimensional pixel data and the three-dimensional pixel data comprises the step of:

15 replacing at least a portion of the pixel data provided by the second of the multiple digital video data streams with at least a portion of the pixel data provided by the first of the multiple digital video data streams.

8. The method of claim 3, wherein the step of allocating the right channel pixel data and the left channel pixel data comprises the step of:

20 utilizing chroma-key values for allocating the right channel pixel data and the left channel pixel data

9 The method of claim 3, wherein the step of allocating the right channel pixel data and the left channel pixel data comprises the step of:

utilizing overscanned information contained in the active stereo video data for allocating the right channel pixel data and the left channel pixel data.

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10. The method of claim 9, wherein the step of utilizing overscanned information comprises the step of:

utilizing overscanned information contained in the active stereo video data for allocating the right channel pixel data to one of various right channel buffers, and the left channel pixel data to one of various left channel buffers.

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11. A device for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said device comprising:

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means for receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;

20 means for re-sequencing the right channel pixel data and the left channel pixel data; and

means for simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.

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12. The device of claim 11, wherein a frame rate of the pixel data simultaneously output for displaying the image to be rendered in passive stereo is approximately one half of a frame rate of the pixel data of the active stereo video data.

5 13. The device of claim 11, further comprising:
a first left channel frame buffer;
a second left channel frame buffer;
a first right channel frame buffer;
a second right channel frame buffer; and
means for allocating the right channel pixel data and the left channel pixel data to said first left channel frame buffer, said second left channel frame buffer, said first right channel frame buffer, and said second right channel frame buffer.

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14. The device of claim 11, further comprising:
15 means for determining whether a second frame of the right channel pixel data and a second frame of left channel pixel data are ready for simultaneously providing;
and

means for simultaneously re-providing a first frame of the right channel pixel data and a first frame of the left channel pixel data if the second frame of the right channel pixel data and the second frame of left channel pixel data are not ready for
20 simultaneously providing.

15. A device for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said device comprising:

logic configured to receive the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;

logic configured to re-sequence the right channel pixel data and the left channel pixel data; and

logic configured to simultaneously output corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.

16. The device of claim 15, further comprising:

logic configured to determine whether a second frame of the right channel pixel data and a second frame of left channel pixel data are ready for simultaneously providing; and

logic configured to simultaneously re-provide a first frame of the right channel pixel data and a first frame of the left channel pixel data if the second frame of the right channel pixel data and the second frame of left channel pixel data are not ready for simultaneously providing.

17. A device for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said device comprising:

an input mechanism configured to receive the active stereo video data, the active stereo video data being provided as multiple digital video data streams containing the right channel pixel data and the left channel pixel data; and

an output mechanism electrically communicating with said input mechanism, said output mechanism being configured to receive the right channel pixel data and the left channel pixel data and selectively provide the pixel data as any one of a passive stereo video data stream and an active stereo video data stream.

18. The device of claim 17, wherein said input mechanism is configured to provide a frame of data corresponding to the image to be rendered, and insert pixel data from the multiple digital video data streams into said frame of data such that, in response to receiving a first of the multiple digital video data streams, said input mechanism provides said frame of data and inserts the pixel data from the first of the multiple digital video data streams into a corresponding portion of said frame of data.

19. The device of claim 17, wherein said output mechanism has a first left channel frame buffer, a second left channel frame buffer, a first right channel frame buffer, and a second right channel frame buffer, said output mechanism being selectively configured to provide said passive stereo video data stream by receiving pixel data from said input mechanism, allocating said pixel data to said first left channel frame buffer, said second left channel frame buffer, said first right channel frame buffer, and said second right channel frame buffer, and simultaneously outputting pixel data from one of said left channel frame buffers and one of said right channel frame buffers.

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